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SEP 02 2005

Docket No.: GEHA 8525C1

Date: September 2, 2005

In re application of: Mark Bartonek	
Serial No.: 10/605,025	Group No.: 2878
Filed: September 2, 2003	Examiner: Christopher G. Webb
For: Method and Apparatus For Time-Phased Constant IR Energy Delta Source	

VIA FACSIMILE 571-273-8300

Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313-1450

**TRANSMITTAL**

Transmitted herewith is:

☒ An amendment in the above-identified application in response to the Office  
Action mailed June 2, 2005;

☐ A Petition For Extension of Time for            months.

☒ No additional fee is required.

Small Entity Status:

☐ Applicant claims small entity status.

☒ Applicant DOES NOT claim small entity status.


The fee has been calculated as shown:

CLAIMS AS AMENDED						
	Claims Remaining After Amendment	Highest No. Previously Paid For	Present Extra	Rate - Other Than A Small Entity	Rate - Small Entity	Additional Fee
Total Claims	35 -	38 =	0	\$50.00	\$25.00	0
Indep. Claims	5 -	5 =	0	\$200.00	\$100.00	0

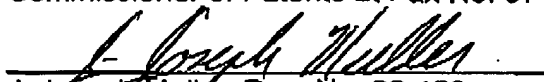
Total Additional Fee:

\$0

The Commissioner is hereby authorized to charge any additional fees or credit overpayment under 37 CFR 1.16 and 1.17 which may be required by this paper to Deposit Account 162201. *Duplicate copies of this sheet are enclosed.*

  
J. Joseph Muller  
Registration No: 28,450

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9/2/05  
September 2, 2005

SEP 02 2005

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:	Mark Bartonek
SERIAL NO.:	10/605,025
FILED:	September 2, 2003
EXAMINER:	Christopher G. Webb
DOCKET NO.:	GEHA 8525C1
GROUP NO:	2878
TITLE:	METHOD AND APPARATUS FOR TIME-PHASED CONSTANT IR ENERGY DELTA SOURCE

Mail Stop Amendment  
Commissioner of Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**AMENDMENT AND RESPONSE A**

In response to the Office communication mailed June 2, 2005, Applicant hereby requests that the following amendments be made to the above-referenced patent application and submits the following remarks.

**Amendments to the Claims** begin on page 2 of this paper.

**Remarks/Arguments** begin on page 13 of this paper.

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J. Joseph Muller  
J. Joseph Muller, Reg. No. 28,450

9/2/05  
Date of Signature

App. No. 10/605,025  
DN: GEHA 8525C1  
Amendment Dated September 2, 2005  
Reply to Office Action of June 2, 2005

**Amendments to the Claims**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**LISTING OF CLAIMS:**

1. (Currently amended) Apparatus for calibrating a railway infrared hot box detector by delivering a desired radiant energy delta to the hot box detector comprising:

a radiant energy source adapted to be positioned adjacent to the hot box detector being calibrated for emitting radiant energy along a path toward the hot box detector;

a lens located between the hot box detector and the radiant energy source for diffusing the radiant energy from the radiant energy source; and

a processor for operating the energy source to achieve the desired radiant energy delta between a first and second mode of the radiant energy source;

wherein the processor controls power delivered to the radiant energy source during the first mode so as to achieve the desired radiant energy delta.

2. (Original) The apparatus of claim 1 wherein the radiant energy source is a solid state device that is cycled on and off in order to deliver the desired radiant energy delta.

3. (Original) The apparatus of claim 1 further comprising a temperature sensor for signaling the temperature of the radiant source to the processor.

App. No. 10/605,025  
DN: GEHA 8525C1  
Amendment Dated September 2, 2005  
Reply to Office Action of June 2, 2005

4. (Original) The apparatus of claim 1 wherein the radiant energy source is mounted upon a heat sink and the apparatus further comprises a temperature sensor for signaling the temperature of the heat sink to the processor.

5. (Original) The apparatus of claim 1 further comprising a radiant energy source driver board that communicates with the processor to provide the appropriate level of power to the radiant energy source.

6. (Original) The apparatus of claim 1 wherein the processor outputs electrical pulses to indicate to the hot box detector when the energy delta is increasing from a reference value to a peak value and when the delta is decreasing again to its reference value.

7. (Currently amended) Apparatus for calibrating a railway infrared hot box detector by delivering a desired radiant energy delta to the hot box detector comprising:

a solid state radiant energy source for emitting radiant energy along a path toward the hot box detector adapted to be positioned adjacent to the hot box detector being calibrated;

a shutter device positioned between the source of radiant energy and the hot box detector along the path, with the shutter device being selectively operable between a first mode operation in which the shutter device permits radiant energy to be transmitted from the source to the hot box detector along the path, and a second mode of operation

App. No. 10/605,025  
DN: GEHA 8525C1  
Amendment Dated September 2, 2005  
Reply to Office Action of June 2, 2005

in which the shutter blocks the transmission of radiant energy from the source to the detector;

a processor for operating the energy source at a desired temperature setpoint;

wherein the processor controls power delivered to the radiant energy source in its first mode so as to achieve the desired radiant energy delta.

8. (Original) The apparatus of claim 7 further comprising a temperature sensor for sensing a temperature of the shutter device and communicating the sensed temperature to the processor, the processor using the sensed temperature to calculate the desired temperature setpoint.

9. (Original) The apparatus of claim 8 further comprising a second temperature sensor for sensing a temperature of the energy source.

10. (Original) The apparatus of claim 7 wherein the shutter device is a wheel having an aperture therein and comprises a motor for rotating the wheel.

11. (Original) The apparatus of claim 10 wherein the motor is controlled by the processor.

12. (Currently Amended) The apparatus of claim 7 wherein a heat shield defining an aperture is mounted along the path and radiant energy is transmitted directly from the source to the hot box detector via the aperture of the heat shield and the shutter device when in its first mode of operation. [[.]]

App. No. 10/605,025  
DN: GEHA 8525C1  
Amendment Dated September 2, 2005  
Reply to Office Action of June 2, 2005

13. (Original) The apparatus of claim 7 wherein the processor outputs electrical pulses to indicate to the hot box detector when the energy delta is increasing from its reference value to its peak value and when it is decreasing again to its reference value.

14. (Original) The apparatus of claim 7 further comprising a lens placed between the hot box detector and the radiant energy source for diffusing the radiant energy from the radiant energy source.

15. (Currently Amended) Apparatus for calibrating a railway infrared hot box detector by delivering a desired radiant energy delta to the hot box detector comprising:

a radiant energy source adapted to be positioned adjacent to the hot box detector being calibrated for emitting radiant energy along a path toward the hot box detector;

a processor to cycle the solid state radiant energy source at a desired frequency and intensity between an on state and an off state to achieve the desired radiant energy delta;

wherein the processor controls power delivered to the radiant energy source so as to achieve the desired radiant energy delta.

16. (Original) The apparatus of claim 15 further comprising a lens placed between the hot box detector and the solid state radiant energy source for diffusing the radiant energy from the solid state radiant energy source.

17. (Original) The apparatus of claim 15 further comprising a temperature sensor for signaling the temperature of the radiant source to the processor.

App. No. 10/605,025  
DN: GEHA 8525C1  
Amendment Dated September 2, 2005  
Reply to Office Action of June 2, 2005

18. (Original) The apparatus of claim 15 wherein the radiant energy source is mounted upon a heat sink and further comprising a temperature sensor for signaling the temperature of the heat sink to the processor.

19. (Original) The apparatus of claim 15 further comprising a radiant energy source driver board that communicates with the processor to provide the appropriate level of power to the radiant energy source.

20. (Original) The apparatus of claim 15 wherein the processor outputs electrical pulses to indicate to the hot box detector when the energy delta is increasing from its reference value to its peak value and when it is decreasing again to its reference value.

21. (Original) The apparatus of claim 15 wherein the heat source is a solid state heat source.

22. (Currently amended) A method of calibrating a railway infrared hot box detector by delivering a controlled level of radiant energy to the detector, the method comprising:

transmitting radiant energy from a radiant energy source when at a high temperature to the hot box detector for a first period of time;

transmitting radiant energy from the radiant energy source when not at a high temperature to the hot box detector for a second period of time;

controlling the operation of the radiant energy source so as to emit radiant energy at a desired level in excess of that of the radiant energy transmitted during the second



App. No. 10/605,025  
DN: GEHA 8525C1  
Amendment Dated September 2, 2005  
Reply to Office Action of June 2, 2005

period of time to achieve a desired radiant energy delta for calibrating the hot box detector; and

sensing a parameter indicative of the temperature of the radiant energy source during the second period of time and controlling the temperature of the radiant energy source to emit the desired radiant energy delta during the first period of time.

23. (Canceled)

24. (Original) The method of claim 22 wherein the radiant energy source is an electrical device and the method further comprises controlling transmission of electrical power to the radiant energy source to achieve the desired radiant energy delta.

25. (Original) The method of claim 22 further comprising controlling the frequency of cycling between the first and second periods of time to achieve the desired radiant energy delta.

26. (Original) The method of claim 22 further comprising controlling the relative durations of the first and second periods of time to achieve the desired radiant energy delta.

27. (Original) The method of claim 22 wherein the radiant energy source is mounted on a heat sink and the method further comprises sensing the temperature of the heat sink during the second period of time.

28. (Original) The method of claim 22 further comprising transmitting data to the hot box detector indicative of a time period when the radiant energy delta is increasing

App. No. 10/605,025  
DN: GEHA 8525C1  
Amendment Dated September 2, 2005  
Reply to Office Action of June 2, 2005

from a reference value to a peak value and a time period when the delta is decreasing to its reference value.

29. (Currently amended) Apparatus for calibrating a railway infrared hot box detector by delivering a desired radiant energy delta to the hot box detector comprising:

a radiant energy source for generating radiant energy along a path toward the hot box detector adapted to be positioned adjacent to a hot box detector to be calibrated;

the radiant energy source being selectively operable between a first mode and a second mode, in the first mode the energy source is heated to a relatively high temperature and generates a high level of radiant energy for transmission to the hot box detector, and in a second mode the energy source is not heated to the relatively high temperature and generates a low level of radiant energy; and

a processor for controlling the operation of the radiant energy source so as to generate a desired radiant energy delta between said first and second modes of the radiant energy source for calibrating the hot box detector;

wherein the processor controls power delivered to the radiant energy source in its first mode so as to achieve the desired radiant energy delta.

30. (Original) The apparatus of claim 29 wherein the radiant energy source is a solid state device and in the first mode utilizes electrical power for heating the device.

App. No. 10/605,025  
DN: GEHA 8525C1  
Amendment Dated September 2, 2005  
Reply to Office Action of June 2, 2005

31. (Original) The apparatus of claim 29 further comprising a temperature sensor for generating data indicative of the temperature of the radiant source to be transmitted to the processor.

32. (Original) The apparatus of claim 29 wherein the radiant energy source is mounted upon a heat sink and the apparatus further comprises a temperature sensor for signaling the temperature of the heat sink to the processor.

33. (Original) The apparatus of claim 29 further comprising a radiant energy source driver board that communicates with the processor to provide the appropriate level of power to the radiant energy source.

34. (Original) The apparatus of claim 29 wherein the processor outputs data to indicate to the hot box detector the time period when the radiant energy delta from the source is increasing from a reference value to a peak value and the time period when the radiant energy delta is decreasing from its peak value to its reference value.

35. (Canceled)

36. (Original) The apparatus of claim 1 wherein the processor controls the frequency of cycling the operation of the radiant energy source between the first and second modes to achieve the desired radiant energy delta.

37. (Original) The apparatus of claim 1 wherein the processor controls the relative durations of the first and second modes to achieve the desired radiant energy delta.

38. (Canceled)

App. No. 10/605,025  
DN: GEHA 8525C1  
Amendment Dated September 2, 2005  
Reply to Office Action of June 2, 2005

**REMARKS**

Claims 1-38 are pending. Claims 1-22 and 28-34 are rejected. Claims 23-27 and 35-38 are objected to. Claims 1, 7, 12, 15, 22, and 29 are amended herein. Claims 23, 35, and 38 are canceled herein.

**Objection of Claims 12 and 38.**

Claim 12 has been amended to have correct punctuation.

Claim 38 has been canceled.

**Rejection of Claim 23 Under 35 U.S.C. §112.**

Claim 23 is rejected under 35 U.S.C. §112 as failing to comply with the enablement requirement.

As suggested by the Examiner, claim 23 has been rewritten in independent form as claim 22 and amended to move the term "during the first period of time" between the terms "the radiant energy source" and "to emit...".

Applicant submits that the claim 22 as amended complies with the enablement requirement.

**Rejection of Claims 29-30, and 33 Under 35 U.S.C. §102.**

Claims 29-30, and 33 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Pat. No. 5,149,025 issued to *Utterback* (hereafter referred to as "*Utterback*").

App. No. 10/605,025  
DN: GEHA 8525C1  
Amendment Dated September 2, 2005  
Reply to Office Action of June 2, 2005

Claim 29 has been amended to include a processor that "controls power delivered to the radiant energy source in its first mode so as to achieve the desired radiant energy delta." Since *Utterback* fails to describe such a processor, applicant respectfully submits that *Utterback* does not anticipate claim 29. Claims 30 and 33 depend from respective base claim 29, and therefore, incorporate all of the subject matter of respective base claims 29. Because a dependant claim cannot be anticipated if the independent claim from which it depends is not anticipated, claims 29 and 33 must also be found unanticipated.

Therefore, Applicant requests that Examiner withdraw the rejection of claims 29-30, and 33 under 35 U.S.C. §102 (b).

**Rejection of Claims 1-22, 28, 31-32, and 34 Under 35 U.S.C. §103.**

The Examiner rejected claims 1-22, 28, 31-32, and 34 under 35 U.S.C. § 103 as being unpatentable over *Utterback* in view of either German Pat. No. 19501110A1 to *Michailicenko*, U.S. Patent Pub. 2003/0230991 A1 to *Muthu*, U.S. Patent Pub. 2002/0033989 A1 to *Fisher*, and/or U.S. Patent Pub. 2002/0178782 to *Lange*.

Independent claims 1, 7, 15, and 29 have been amended herein to include the limitations of original claim 35 (indicated as allowable if rewritten in independent form by the Examiner), which included a processor that controls power delivered to the radiant source to achieve the desired radiant energy delta. Independent claim 22 has been

App. No. 10/605,025  
DN: GEHA 8525C1  
Amendment Dated September 2, 2005  
Reply to Office Action of June 2, 2005

amended to include the step of sensing a parameter indicative of the temperature of the radiant energy source. Therefore, Applicant believes that the prior art references no longer contain all the claim limitations of claims 1, 7, 15, 22, and 29, as required by the Manual of Patent Examining Procedure ("MPEP") to establish a *prima facie* case of obviousness. The MPEP states,

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all of the claim limitations. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed., Cir 1991) See MPEP § 2143 - § 2143.03 for decisions pertinent to each of these criteria.

MPEP § 706.02(j) (emphasis added). The MPEP also states,

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q.2d 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 U.S.P.Q. 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988).

MPEP § 2143.03 (emphasis added).

Independent claims 1, 7, 15, 22, and 29 form the basis for the remaining dependent claims. Because a dependant claim cannot be obvious if the independent claim from which it depends is not obvious, all claims depending from claims 1, 7, 15,

App. No. 10/605,025  
DN: GEHA 8525C1  
Amendment Dated September 2, 2005  
Reply to Office Action of June 2, 2005

22, and 29 must also be found nonobvious. Therefore, Applicant respectfully requests that the Examiner withdraw the rejection of claims 1-22, 28, 31-32, and 34 as being obvious under 35 U.S.C. § 103.

**Conclusion.**

Applicant believes the above analysis and the amendments made herein overcome all of the Examiner's objections and all of the Examiner's rejections of the and that claims 1-22, 24-34, and 36-37 are in condition for allowance. Therefore, applicant submits that claims 1-22, 24-34, and 36-37 constitute allowable subject matter and should be favorably considered by the Examiner, and issue a timely Notice of Allowance for those claims.

The Commissioner is hereby authorized to charge any additional fees or credit overpayment under 37 CFR 1.16 and 1.17, which may be required by this paper to Deposit Account 162201.

Respectfully submitted,

Date: September 2, 2005

  
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Page 13 of 13